

WHAT IS CLAIMED IS:

1. A digital data recording and reproducing system comprising:

a receiver for receiving transmitted digital data including a plurality of multiplexed programs consisting of video, audio, data and so forth which are subjected to compression;

a program selector for selecting a program to be recorded from among the plurality of multiplexed programs in response to an instruction from a user;

a recorder for storing digital data of the program selected by said program selector, and for reproducing recorded digital data; and

a decoder for decoding digital data reproduced by said recorder to restore the selected program.

2. The digital data recording and reproducing system according to claim 1, wherein said receiver and said decoder are included in a set-top box, and said program selector and said recorder are included in a digital VTR.

3. The digital data recording and reproducing system according to claim 1, wherein said receiver, said decoder and said program selector are included in a set-top box, and said recorder consists of a digital VTR.

4. A digital data recording and reproducing system comprising:

a receiver for receiving transmitted digital data including a plurality of multiplexed programs consisting of video, audio, data and so forth which are subjected to compression;

a recorder for storing received digital data, and for reproducing recorded digital data;

a decoder for decoding digital data reproduced by said recorder to restore the programs; and

- 5 a discontinuity detector for detecting a discontinuity between the programs while said decoder is decoding the compressed digital data of the programs,

wherein said discontinuity detector restarts said decoder upon detecting the discontinuity between the programs.

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5. The digital data recording and reproducing system according to claim 4, wherein said discontinuity detector detects the discontinuity between the programs by using information specified in IEC/ISO 13818.

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6. The digital data recording and reproducing system according to claim 5, wherein said discontinuity detector detects the discontinuity between the programs by using program_number specified in ISO/IEC 13818 as information for indicating a number of each of the programs.

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7. The digital data recording and reproducing system according to claim 5, wherein said discontinuity detector utilizes a continuity_counter that is specified in ISO/IEC 13818 and increments with each transport packet having a corresponding PID (Packet Identification) in a transport packet layer, and detects the discontinuity between the programs in response to a change in the increment of the continuity_counter.

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30 8. The digital data recording and reproducing system according

to claim 5, wherein said discontinuity detector utilizes a
Decoding Time Stamp specified in ISO/IEC 13818 for indicating
a time when each access unit is to be decoded, and detects the
discontinuity between the programs in response to a time
5 difference between the Decoding Time Stamp.

9. The digital data recording and reproducing system according
to claim 5, wherein said discontinuity detector utilizes a
vbv_delay in a picture header, and detects the discontinuity
10 between the programs by comparing an amount of data to be stored
in a buffer calculated from the vbv_delay with an amount of data
of the program actually stored in the buffer before decoding.

10. The digital data recording and reproducing system
15 according to claim 5, wherein said discontinuity detector
utilizes at least two of a program_number, a continuity_counter,
Decoding Time Stamp and a vbv_delay in a picture header, which
are specified in ISO/IEC 13818 for indicating a number of each
program, for incrementing with each transport packet with a
20 corresponding PID in a transport packet layer, for decoding time
of each access unit and for indicating an amount of time a picture
header should reside in a VBV buffer before decoding,
respectively.

25 11. The digital data recording and reproducing system
according to claim 4, further comprising a program switching
signal addition section for recording, when a program to be
stored is switched in response to a user instruction, not only
the program itself, but also a program switching signal
30 indicating the program switching, wherein said discontinuity

12. The digital data recording and reproducing system
5 according to claim 4, wherein said discontinuity detector
outputs fixed data when detecting the discontinuity between the
programs.